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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/587,276	07/25/2006	Tatsuhiko Suzuki	043888-0491	4914
53080 7590 01/28/2008 MCDERMOTT WILL & EMERY LLP 600 13TH STREET, NW WASHINGTON, DC 20005-3096			EXAMINER RAMADAN, RAMY O	
			ART UNIT 2838	PAPER NUMBER
			MAIL DATE 01/28/2008	DELIVERY MODE PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/587,276	Applicant(s) SUZUKI ET AL.	
	Examiner Ramy Ramadan	Art Unit 2838	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 November 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 4-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 4-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 25 July 2007 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>07/25/2007</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election of Species I (Claims 1 and 4-8) in the reply filed on 11/08/2007 is acknowledged. Because applicant did not specify otherwise, the election has been treated as an election without traverse (MPEP § 818.03(a)).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1 and 4-8 rejected under 35 U.S.C. 103(a) as being unpatentable over Inoue et al. (JP 2000-243459 A), hereinafter Inoue, in view of Galbraith et al. (US 6,271,647), hereinafter Galbraith.**

As per claim 4, Inoue discloses (Abstract, Page 2, Para [0009]-[0010] and Page 5, Para [0033]-[0034]) and shows in Fig. 2, a service life determining device for a storage battery comprising:

storage means (7) which stores data indicating a connection (relationship) of battery (3) life information to negative charge force (load power) applied to the battery (3) in discharge;

negative charge value measurement means (4) (load power measuring means) which measures the negative charge force applied to the battery (3);

means to compute a life expectancy value (expected life value selecting means) which calculates a life expectancy value (L_o) by comparing battery life information to the negative charge force (load power) applied to the battery, from the data stored in the storage means (5) as an expected life value (L_o) (Page 2, Para [0009]);

counting of discharge means (7) (number-of-discharges counting means) which counts the number-of-discharges of the battery (3);

amount conversation means (13) (first life reduction amount calculating means) which calculates a first life lowering amount (L_1) from a linear function (a natural logarithmic function) making the number-of-discharges counted by counting of discharge means (7) as a variable (Page 4, Para [0023], Page 5, Para [0035] and Applicant admitted prior art (Page 2, Para [0004])); and

residual life value conversion means (15) (remaining life value calculating means) which calculates a residual life value (L) from life expectancy value (L_o) and first life lowering amount (L_1) using the formula $L = L_o - (L_1 + L_2)$.

Inoue does not explicitly disclose measuring an environmental temperature and selecting a life expected value for the battery corresponding to the environmental temperature.

However, Galberaith discloses an apparatus for estimating the service life of a battery comprising a temperature measuring circuit that measures a temperature of an operating environment and estimate a service life of the battery based on the measured temperature (Col. 1, lines 66-67 and Col. 2, lines 1-13).

Galberaith is evidence that ordinary workers in the art would find a reason, suggestion or motivation to modify the device as disclosed by Inoue to include a temperature measuring circuit that measures a temperature of an operating environment and estimate a service life of the battery based on the measured temperature as disclosed by Galberaith to provide accurate estimation of battery life since battery life varies depending on the environmental temperature (Col. 3, lines 22-26).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the device as disclosed by Inoue to include a temperature measuring circuit that measures a temperature of an operating environment and estimate a service life of the battery based on the measured temperature as disclosed by Galberaith to provide accurate estimation of battery life since battery life varies depending on the environmental temperature (Col. 3, lines 22-26).

As per claim 1, the method merely recites the steps of using the elements of the device as disclosed above and since each element must be present to perform the steps, the method as claimed would be obvious in view of the device as disclosed by Inoue when modified by Galberaith.

As per claim 5, Inoue shows in Fig. 2, that each of the means is integrally provided for the battery in a life judging section (2) of a life judging equipment (1).

As per claim 6, Inoue shows in Fig. 2, a residual life display means (9) for displaying the residual life value (L).

As per claim 7, Inoue shows in Fig. 2, means of communications (12) for communicating the residual life value (L).

As per claim 8, Inoue discloses and shows in Fig. 2, a charge control means (11) for controlling the charging of the battery (3) based on the residual life value (L) (Page 6, Para [0036]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ramy Ramadan whose telephone number is (571) 272-9761. The examiner can normally be reached on Mon-Fri 7:30 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Akm Ullah can be reached on (571) 272-2361. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a

Application/Control Number:
10/587,276
Art Unit: 2838

Page 6

USPTO Customer Service Representative or access to the automated information
system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Gary L Laxton/

Gary L. Laxton
Primary Examiner
Art Unit 2838

RR
1/18/2008